

REMARKS/ARGUMENTS

This Amendment is in response to the Office Action mailed March 6, 2008.

Claims 1, 2, 5-11, 14-19 and 31 are pending in this application. Reconsideration of the rejected claims and consideration of the newly presented claims is respectfully requested.

The Invention

The present invention is directed to speakers that can attach to a computer. The speakers have minimal controls, such as an on/off switch and a volume control. Circuitry for bass equalization is included in the speaker housing to automatically adjust the boosting of the bass depending on the volume, without additional control needed from the user. This is done using a negative feedback path for a bass boosting amplifier that reduces a gain of the amplifier as the amplitude of the audio electrical signal increases.

Amendments

The independent claims 1 and 11 have been amended to clarify that the circuit is in the bass portion of a speaker circuit, by including a low pass filter such as shown as filter 21 in Fig. 1 of the present application. This amendment is intended to avoid reading the claims on a driver in a circuit for a completely different purpose which happens to have elements in common.

I. Rejection under 35 USC § 103, Konno in view of Brokaw

Claims 1, 2, 31 and 5-10 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Konno (US Patent 5,305,388) (hereinafter "*Konno*") in view of Brokaw (US Patent 3,564,445) (hereinafter "*Brokaw*").

Konno describes a bass compensation circuit for an equalizer (such as for a stereo receiver) which includes manual user controls to adjust the relative amounts of bass and treble (the variable resistors 8 and 10). As noted in the office action, Konno does not disclose an amplifier with a negative feedback path. In fact, Konno does not disclose negative feedback at all, instead providing a "positive feedback type high-pass filter" (col. 2, lines 12-13). Konno also does not describe any automatic adjustment of the gain, instead describing "a variable resistor for volume control" (col. 2, lines 10-11). The variable resistor is obviously a manual volume control

knob, as would be apparent to those of skill in the art. The claimed invention, on the other hand, uses a negative feedback path and "automatic dynamically adjusted gain and frequency response" (emphasis added).

Brokaw describes a circuit for eliminating crossover distortion in solid state amplifiers. A diode pair (Fig. 4) in a negative feedback loop of the amplifier to control the level of the amplifier output in the same manner as the feedback amplifier of Fig. 2. This feedback amplifier is used to pre-distort the input signal to compensate for the crossover distortion (col. 3, lines 35-37). As noted in the abstract, this circuit is "for solid state push-pull amplifiers which eliminates distortion when these amplifiers are improperly biased" (Abstract, col. 1, lines 14-15). Brokaw is not directed to bass equalization with changes in volume as in the present invention. Rather, it is directed to "eliminating crossover distortion" (see the title) for amplifiers that are "improperly biased."

Combination of Konno and Brokaw. There is nothing to suggest combining Konno and Brokaw. Brokaw is directed to a different problem than Konno. Konno uses positive feedback, and there is nothing to suggest replacing this with a negative feedback circuit with a different purpose.

In addition, the claims call for a feedback path which "reduces a gain of said amplifier as said amplitude of said audio electrical signal increases such that the gain of a bass sound is produced by said bass speaker is reduced." As described in Brokaw, the function of the circuit is completely different. As explained in col. 3, lines 3-9, the signal is increased, and then the distortion is removed, so that the signal output "is an amplified duplicate of the undistorted input" (col. 3, lines 9-10). There is no discussion of reducing the gain as volume increases. Thus there is no motivation to combine Brokaw with Konno in a manner which will provide the claimed invention.

If one were to combine Brokaw with Konno in the most logical manner, without the benefit of hindsight using the present invention, a very different circuit from the present invention would result. Brokaw is directed to eliminating distortion, and thus requires the signal to be amplified first with a pre-distorted driver 9 as shown in Fig. 1. Then, the negative feedback amplifier can be used to subtract out the distortion, without the result being a reduced

signal. This would suggest adding the amplifier and it's negative feed back after the positive feed back amplifier of Konno. To combine the two amplifiers would seem to defeat the purpose of both circuits, and thus would not be obvious.

Accordingly, the claims are not obvious from the combination of Konno and Brokaw.

II. Rejection under 35 USC § 103, Konno in view of Brokaw and further in view of Serikawa

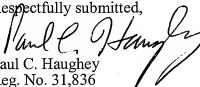
Claims 11 and 14-19 are rejected under 35 U.S.C. §103(a) as being unpatentable over *Konno* in view of *Brokaw* and further in view of *Serikawa* et al. (US Patent 4,751,739) (hereinafter "*Serikawa*"). *Serikawa* is cited as showing a speaker housing with both treble band and sub-woofer speakers. Obviously, this configuration is well known. There is nothing in *Serikawa* to make up for the deficiencies of *Konno* and *Brokaw* in teaching the present invention, as noted above. There is nothing in *Serikawa* to provide any motivation to combine *Konno* and *Brokaw* in a manner that would produce the claimed invention. Accordingly, the claims are not obvious from the combination of *Konno*, *Brokaw* and *Serikawa*.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 415-576-0200

Respectfully submitted,


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